

CLAIMS

1. Composition which can be used for paint and varnish, made up of a dispersion comprising at least one aqueous phase and a population A of particles of (co)polymer(s) whose size is between 10 and 1000 nanometres, characterized in that the particles have an accessible acidic (advantageously carboxylic) functional group content of between 0.2 and 1.2 milliequivalents/gram of solid matter and that they have an accessible alcoholic functional group content of between 0.3 and 1.5 milliequivalents/gram.
2. Composition according to claim 1, characterized in that the content of latex particles is between 10 and 80 %, advantageously between 10 and 60 % on a mass basis.
3. Composition according to claims 1 and 2, characterized in that the acidic functional groups of the particles of the population A are weak acidic functional groups whose pK_a is at least 2, preferably 3.
4. Composition according to claims 1 to 3, characterized in that the dispersity of the population A ($(d_{90} - d_{10})/d_{90}$) is between 0 and 1/4.
5. Composition according to claims 1 to 4, characterized in that the (co)polymer particles originate from a copolymerization between at least one free acid containing an activated ethylenic bond and at least one free alcohol containing an activated ethylenic functional group.
6. Composition according to claims 1 to 5, characterized in that the average molecular mass of the (co)polymer is between 5×10^4 and 5×10^6 .
7. Composition according to claims 5 to 6, characterized in that the said free alcohol containing an activated ethylenic functional group is a diol monoesterified with an alpha-ethylenic acid.
8. Composition according to claims 1 to 7, characterized in that the content of the unit originating from the monomer consisting of the said free alcohol containing an activated ethylenic functional group is between 3 and 15 %, advantageously between 4 and 10 %.
9. Composition according to claims 7 and 8, characterized in that the said diol is an ω, ω' -diol advantageously chosen from 1,3-propanediol and glycol.
10. Composition according to claims 7 to 9, characterized in that the said alpha-ethylenic acid is an optionally substituted acrylic acid.
11. Composition according to claims 5 to 10, characterized in that the said free acid is an optionally monosubstituted acrylic acid or one of its salts.
12. Composition according to claims 5 to 11, characterized in that the content of unit originating from a free carboxylic acid is between 2 and 10 % (mole).
13. Composition according to claims 1 to 12, characterized in that the particles originate from particles which have undergone an epipolymerization.

14. Composition according to claims 1 to 13, characterized in that the emulsifier content is at most 2 %, advantageously at most 1 %.

15. Composition according to claims 1 to 14, characterized in that it additionally comprises a population B of particles bearing isocyanate functional group(s).

16. Composition according to claim 15, characterized in that the said isocyanate functional groups are masked.

17. Composition according to claims 15 and 16, characterized in that the isocyanate functional group content is between 0.5 and 1 milliequivalent/gram of particles of population B.

18. Composition according to claims 15 to 17, characterized in that the mass ratio of the populations A and B is such that the ratio of the alcohol functional groups to the isocyanate functional groups is between 1/10th and 10, advantageously between 0.3 and 5.

19. Composition according to claims 15 to 18, characterized in that the population B constitutes an emulsion with the aqueous phase.

20. Composition according to claims 15 to 19, characterized in that the population B constitutes a latex with the aqueous phase.

21. Composition according to claims 15 to 20, characterized in that the populations A and B coincide to constitute a population of particles containing free carboxylic functional groups, free alcohol functional groups and masked isocyanate functional groups at the same time.

22. Composition according to claim 21, characterized in that the ratio (equivalent) of the masked isocyanate to the alcohol functional groups is between 0.1 and 10.

23. Composition according to claims 21 and 22, characterized in that the ratio, (equivalent), of the alcohol functional groups to the carboxylic functional groups is between 0.2 and 5.

24. Composition according to claims 21 to 23, characterized in that the ratio (equivalent), of the isocyanate to the carboxylic functional groups, is between 0.1 and 10.

25. Composition according to claim 1 to 24, characterized in that it additionally comprises pigments.

26. Composition according to claims 1 to 25, characterized in that the said aqueous phase has a pH of between 4 and 9.

27. Use of the compositions according to claims 1 to 26, for manufacturing coatings.

FOOTNOTES

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28. Process for the preparation of a coating, characterized in that it comprises the stage of application onto a support of a composition according to claims 1 to 26.

29. Process according to claim 28, characterized in that the said
5 compositions contain at least one masked isocyanate functional group and in that they comprise a stage of curing at a temperature of between 120 and 200°C.

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